

What is claimed is:

1 1. A method of designing a video signal processing integrated circuit (IC) incorporating a
2 luminance signal processing block and a color signal processing block having a de-emphasis
3 circuit, wherein a circuit element for determining a level of a reproduced video signal of the de-
4 emphasis circuit is incorporated into the video signal processing IC, and wherein the circuit
5 element is connected to a ground which is used exclusively for the luminance signal processing
6 block.

7 2. The method according to claim 1, wherein the circuit element comprises an amplifier
8 and a switching element for switching resistors for determining a gain of the amplifier.

9 3. The method according to claim 2, wherein the switching element comprises at least
10 one Zener diode, and ON/OFF switching of said at least one Zener diode is determined using a
11 Zener breakdown characteristic of said at least one Zener diode.

12 4. The method according to claim 1, wherein the circuit element comprises an amplifier,
13 a switching element connected to ground, and a plurality of resistors connected between the
14 amplifier and the switching element.

15 5. The method according to claim 4, wherein the switching element selectively switches

each of the resistors so that certain resistors are connected to the ground and other resistors are not connected to the ground, thereby determining a gain of the amplifier.

6. The method according to claim 1, wherein a value of the circuit element is determined such that, after inputting a luminance signal and modulating the luminance signal with a frequency deviation of 1 MHz, the level of the reproduced video signal of the de-emphasis circuit is 1 Vpp under a termination condition of 75 Ω .

7. A video signal processing integrated circuit (IC) incorporating a determining circuit for determining a level of a reproduced video signal of a de-emphasis circuit, said determining circuit including a reproduced video level setting unit, wherein the reproduced video level setting unit comprises:

an amplification unit for amplifying a demodulated luminance signal output from the de-emphasis circuit;

a plurality of resistance elements connected to the amplification unit; and

a gain-controlled switching unit connected to the plurality of resistance elements for switching electrical connections of the plurality of resistance elements according to the level of the reproduced video signal, thereby determining a gain of the amplification unit.

8. The video signal processing IC according to claim 7, wherein the gain-controlled switching unit comprises at least one Zener diode, and ON/OFF switching of said at least one

3 Zener diode is determined using a Zener breakdown characteristic of said at least one Zener
4 diode.

1 9. The video signal processing IC according to claim 7, wherein switching control of the
2 gain-controlled switching unit is determined such that, after inputting a luminance signal, the
3 luminance signal is modulated with a frequency deviation of 1MHz, and the level of the
4 reproduced video signal is 1 Vpp under a termination condition of 75 Ω .

10. The video signal processing IC according to claim 7, wherein said amplification unit
comprises a transistor having a base connected to an output of the de-emphasis circuit, an emitter
connected to a supply voltage, and a collector connected to said plurality of resistance elements.

11. A method of designing a video signal processing integrated circuit (IC), comprising
the steps of:

3 providing said video signal processing IC with a luminance signal processing block
4 having a de-emphasis circuit;

5 incorporating a determining circuit for determining a level of a reproduced video signal of
6 the de-emphasis circuit into the video signal processing IC; and

7 connecting the determining circuit between an output of the de-emphasis circuit and a
8 ground exclusively used for the luminance signal processing block.

1 12. The method according to claim 10, further comprising providing the determining
2 circuit with an amplifier and a switching element for switching resistors for determining a gain of
3 the amplifier.

1 13. The method according to claim 12, further comprising forming the switching element
2 with at least one Zener diode, and ON/OFF switching said at least one Zener diode using a Zener
3 breakdown characteristic of said at least one Zener diode.

1 14. The method according to claim 11, further comprising providing the determining
2 circuit with an amplifier, a switching element connected to ground, and a plurality of resistors
3 connected between the amplifier and the switching element.

1 15. The method according to claim 14, further comprising operating the switching
2 element by selectively switching each of the resistors so that certain resistors are connected to the
3 ground and other resistors are not connected to the ground, thereby determining a gain of the
4 amplifier.

1 16. The method according to claim 1, further comprising determining a value of the
2 determining circuit such that, after inputting a luminance signal and modulating the luminance
3 signal with a frequency deviation of 1MHz, the level of the reproduced video signal of the de-
4 emphasis circuit is 1Vpp under a termination condition of 75Ω .

1 17. A video signal processing circuit for determining a level of a reproduced video
2 signal, said circuit comprising:

3 a de-emphasis circuit having an output for providing a demodulated luminance signal;
4 and

5 a video level setting unit connected between the output of the de-emphasis circuit and a
6 ground which is used exclusively for luminance signal processing.

18. The circuit according to claim 17, wherein said video level setting unit comprises:

an amplifier connected to the output of said de-emphasis circuit for amplifying the
demodulated luminance signal; and

a gain control switching unit for determining a gain of the amplifier.

19. The circuit according to claim 18, wherein said gain control switching unit
2 comprises:

3 a plurality of resistors; and

4 a plurality of switches, one for each of said resistors, each of said switches being
5 connected between a respective one of said resistors and the ground for switching electrical
6 connection of selected ones of the plurality of resistors to the ground according to the level of the
7 reproduced video signal, thereby determining the gain of the amplifier.

1 20. The circuit according to claim 19, wherein each of said plurality of switches
2 comprises a Zener diode, and ON/OFF switching of each Zener diode is determined using a
3 Zener breakdown characteristic of said each Zener diode.

1 21. The circuit according to claim 18, wherein said amplifier comprises a transistor
2 having a base connected to an output of the de-emphasis circuit, an emitter connected to a supply
3 voltage, and a collector connected to said gain-control switching unit.

22. The circuit according to claim 17, wherein the gain-control switching unit comprises
at least one Zener diode, and ON/OFF switching of said at least one Zener diode is determined
using a Zener breakdown characteristic of said at least one Zener diode.

23. The circuit according to claim 17, wherein switching control of the gain-control
switching unit is determined such that, after inputting a luminance signal, the luminance signal is
modulated with a frequency deviation of 1MHz, and the level of the reproduced video signal is
1V_{pp} under a termination condition of 75Ω.